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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/903,242	07/11/2001	H. Dean Cubley	1981-00900 JMH	9493
23505	7590	08/22/2005	EXAMINER	
CONLEY ROSE, P.C.			CHEN, SHIH CHAO	
P. O. BOX 3267			ART UNIT	
HOUSTON, TX 77253-3267			PAPER NUMBER	
			2821	

DATE MAILED: 08/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No.	Applicant(s)	
	09/903,242	CUBLEY ET AL.	
	Examiner	Art Unit	
	Shih-Chao Chen	2821	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 July 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>7/11/01, 8/6/01</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hori et al. (U.S. Patent No. 5,594,455).

Hori et al. teaches in figures 3-4 an FR-4 circuit board [33] having a thickness of $0.06 \pm 10\%$ inches (i.e. 1.6 mm, See col. 6, lines 23-26); a side-fed patch antenna (See Fig. 3a-3e) having the circuit board as a dielectric spacer; a ground plane [37] on a first side of the circuit board; a rectangular patch [31] on a second side of the circuit board opposite the first side; a feed [35] connected to a side of the patch halfway along the width; the patch antenna is configured to operate between 2.400 and 2.483 GHz (i.e. 2.2 GHz, See col. 6, lines 26-28); the patch [31] and feed [35] comprise copper cladding; a radio-frequency ("RF") module (i.e. transceiver) coupled to the patch antenna and configured to convert signals between baseband and an operating frequency range of the patch antenna.

Hori et al. discloses the claimed invention except for the ground plane has a width of at least $1.875 \pm 10\%$ inches and a length of at least $2.25 \pm 10\%$ inches; the patch has a width of $1.5 \pm 10\%$ inches and a length of $1.164 \pm 10\%$ inches; the feed has a width of $0.07 \pm 10\%$ inches and a length of at least $0.625 \pm 10\%$ inches; and the patch and feed

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having a thickness of approximately 0.063 inches. It would have been an obvious matter of design choice to have different size of the ground plane, the patch and the feed, since such a modification would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art.

3. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hori et al (Cited above) in view of Plasson et al. (U.S. Patent No. 6,795,688).

Hori et al. teaches every feature of the claimed invention in paragraph 2 except for a USB bus interface that couples the RF module to a USB bus.

Plasson et al. teaches in figure 1 a USB bus interface [140] that couples the RF module [110] to a USB bus (See col. 9, lines 15-32).

In view of the above statement, it would have been obvious to one having ordinary skill in the art at the time the invention was made by using a USB bus interface that couples the RF module to a USB bus as taught by Plasson et al. in order to runs software that allows transceiver to interface with the operating system of Bluetooth-enable device (See col. 9, lines 15-32).

4. Claims 6, 8, 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tran et al. (U.S. Patent No.US 2002/0194621 A1) in view of Hori et al. (Cited above).

Tran et al. teaches in figures 1-4 a set-top box [100] comprising: a metallic enclosure [102] having a front face [114]; a non-metallic bezel [118] attached to the front face of the enclosure and defining an interstitial space [101] between the front face and

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the bezel; and a communications board [134] located in the interstitial space, wherein the communications board includes a patch antenna [138]; a USB bus interface [122] coupled to the RF module [136]; a USB bus (See [0053]) that couples the USB bus interface to electronic circuitry in the metallic enclosure; and the communications board is mounted flush against the front face of the metallic enclosure.

Tran et al. teaches every feature of the claimed invention except for an FR-4 circuit board having a thickness of $0.06 \pm 10\%$ inches; a side-fed patch antenna having the circuit board as a dielectric spacer; and the patch antenna is configured to operate between 2.400 and 2.483 GHz.

Hori et al. teaches in figures 3-4 an FR-4 circuit board [33] having a thickness of $0.06 \pm 10\%$ inches (i.e. 1.6 mm, See col. 6, lines 23-26); a side-fed patch antenna (See Fig. 3a-3e) having the circuit board as a dielectric spacer; a ground plane [37] on a first side of the circuit board; a rectangular patch [31] on a second side of the circuit board opposite the first side; a feed [35] connected to a side of the patch halfway along the width; and the patch antenna is configured to operate between 2.400 and 2.483 GHz (i.e. 2.2 GHz, See col. 6, lines 26-28);

In view of the above statement, it would have been obvious to one having ordinary skill in the art at the time the invention was made by using the patch antenna includes circuit board; and side-fed patch antenna as taught by Hori et al. in order to have a printed patch antenna (See Abstract).

5. Claims 7,9 and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tran et al. (Cited above) in view of Hori et al. (Cited above).

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Tran et al. in view of Hori et al. discloses the claimed invention except for the ground plane has a width of at least $1.875 \pm 10\%$ inches and a length of at least $2.25 \pm 10\%$ inches; the patch has a width of $1.5 \pm 10\%$ inches and a length of $1.164 \pm 10\%$ inches; the feed has a width of $0.07 \pm 10\%$ inches and a length of at least $0.625 \pm 10\%$ inches; the patch and feed having a thickness of approximately 0.063 inches; the communication board is mounted about 1.23 inches from the front face of the metallic enclosure; and the patch antenna is less than about 0.5 inches from the bezel. It would have been an obvious matter of design choice to have different size of the ground plane, the patch, the feed and the communications board, since such a modification would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art.

Correspondence


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shih-Chao Chen whose telephone number is (571) 272-1819. The examiner can normally be reached on Monday-Friday from 7 AM to 4:30 PM, First Fri. off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Shih-Chao Chen
Primary Examiner
Art Unit 2821


SHIH-CHAO CHEN
PRIMARY EXAMINER

SXC
August 15, 2005